

Tergo™ XCF3

Superior Cleaning Fluid and Degreaser

- Removes caked-on greases, silicone fluids, organic contaminants and waxes.
- Ideal replacement for Novec™ 72DE, Novec™ 73DE, Vertrel® MCA, Vertrel® SDG and more.

Introduction

Tergo XCF3 is designed to eliminate the most tenacious contaminants in the most efficient time, leaving your parts dry and ready for further processing. *Tergo XCF3* is an azeotropic, specialized solvent blend ideal for operating in open-top, ultrasonic and vacuum vapor degreasers. It has excellent solvency power for a wide range of soils, including oils, greases, waxes, and hydraulic fluids.

Formulated with hydrochlorofluoroolefin technology, this non-flammable blend exhibits a low Global Warming Potential (less than 1), no Ozone Depleting Potential, is non-hazardous and does not contain any ingredients that qualify as a PFAS in the USA or EU. With its high-KB formulation, it's ideal for cleansing metals and circuit boards and has outstanding compatibility across various metal alloys and high-density polymer substrates. Its chemical composition also renders it inhospitable to pathogens, making it invaluable in aerospace and medical settings where bioburden is a concern.

Unlike legacy solvents such as trichloroethylene (TCE) and n-propyl bromide (nPB), *Tergo XCF3* is hydrolytically stable and does not require additional stabilizers or “boosters” to maintain safe cleaning efficiency. *Tergo XCF3* has a low surface tension and high density, making it an effective cleaner in tight spaces and for displacing particulate and dust.

This technical bulletin summarizes product properties, applications and use, safety, health, environmental and regulatory information. Users should also consult the appropriate Safety Data Sheet (SDS) for additional details.

Applications and Benefits

Tergo XCF3 is designed to replace TCE, nPB, HFCs, PFCs, HFEs and PFAS-containing solvents used for cleaning, degreasing, flushing or in carrier fluid applications. *Tergo XCF3* can solubilize and carry chlorinated, fluorinated, silicone and hydrocarbon mixtures.

Tergo XCF3 can be used on chemically resilient substrates including metals, high density polymers and printed circuit boards. Some of the benefits and potential applications include:

Applications

- Precision cleaning of metals, alloys, composites and some plastics
- Heavy degreasing and/or flux removal
- Particle displacement
- Carrier solvent for fluorinated polymers, oils and greases
- Carrier solvent for silicone oils and greases
- Drying agent after cleaning with hydrocarbons or alcohols
- Replacement for HFCs, HFEs, Chemours Vertrel®, Solvay Solvokane™ and 3M™ Novec™ solvents

Benefits

- Thermally and hydrolytically stable
- Non-flammable
- Non-corrosive
- High KB cleaning power
- Extremely low Global Warming Potential (GWP)
- Zero Ozone Depletion Potential (ODP)
- Fast drying
- Low surface tension, low viscosity, high liquid density
- Excellent permeability
- Recoverable by simple distillation
- Can be used with ultrasonics



Tergo™ Performance Fluids

The MicroCare™ Signature Line of Precision Products

Cutting-edge cleaning fluids meticulously crafted for diverse industrial applications. Each Tergo™ product boasts a distinctive formula and unparalleled operational attributes, all united by a common mission: to deliver efficient and sustainable performance.



Recovery

Tergo XCF3 is an azeotropic blend and is easily recoverable by distillation, either by utilizing a vapor degreaser or a simple still apparatus. Due to its stable blend composition, *Tergo* XCF3 can be effectively used and recycled within vacuum degreasers and ultrasonic distillation units. Recovery should be closely monitored to ensure that the operating levels are maintained. Spent ingredients and still bottoms need to be disposed of according to Federal, State and local regulations.

Specifications

Table 1. Physical Properties

Boiling Point	45.6°C (114°F)
Specific Gravity (g/mL)*	1.29
Vapor Pressure (mmHg)*	351
Surface Tension (dyne/cm)*	21
Evaporation Rate (Ether=1)*	<1
KB value	115
Flash Point (Open/Closed cup)	None

*All data collected at 25C.

Table 2. Product Comparison Chart

Property	n-PB	TCE	Novec™ 72DE	Novec™ 73DE	Novec™ 72DA	Vertrel™ SMT	Vertrel™ SDG	Tergo™ MCF	Tergo™ XCF3
BP (C)	71	87	43	48	44	37	43	47	45.6
KB value	125	129	52	83	58	38	95	>100	115
Specific Gravity	1.35	1.46	1.28	1.31	1.27	1.37	1.29	1.28	1.29
Surface Tension (dyne/cm)	25.9	29.3	19	19.9	18	15.5	21.2	21	21
GWP	16	630	43	47	42	689	148	13	<1
Plastic Compatibility	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor

Use Procedures

It is recommended that *Tergo* Performance fluids be used in a vapor degreaser or closed-loop system to optimize cleaning efficiency, economy and emission control. Cleaning procedures for *Tergo* XCF3 are similar to those of conventional vapor degreasing products. The procedures consist of immersing a workload into the vapor, boiling solvent and rinsing solvent followed by drying in the solvent vapor. Coating can be accomplished by mixing the coating material with *Tergo* XCF3 and dipping a workload into the coating bath followed by air drying.

Environmental Health and Safety

Properties	
Ozone Depletion Potential (ODP) ¹	None
Global Warming Potential (GWP) ²	<1
Flash Point ³	None
AEL, 8h-TWA (ppm)	200

¹ CFC-11 = 1.0

² CO2 = 1.0, 100yr ITH

³ Tag Closed Cup, ASTM D56

Materials Compatibility

Tergo XCF3 has a moderate range of compatibilities. Plastic and elastomer compatibility may be dependent on exposure time and temperature. *MicroCare* recommends always testing compatibility on scrap or surplus parts prior to introducing a new fluid to the production process.

Table 3. Plastic Compatibility
Immersion: 5 Minutes at Boil Point

Compatible	
HDPE	PTFE/Teflon™
LDPE	FEP
PP	Liquid Crystal Polymer
Polyester	PFA
PET	PVDF
Halar	Ryton
Kynar	Nylon
Incompatible	
PMMA	ABS
Polycarbonate	Polystyrene

Table 4. Elastomer Compatibility
Immersion: 5 Minutes at Boil Point

Compatible	
Parafluor	Teflon™ encapsulated gaskets
Ryton	Kalrez
Incompatible	
Silicone	Hypalon
Viton™	Buna N

Storage and Handling

Tergo XCF3 is thermally and hydrolytically stable and does not oxidize or degrade during storage under normal conditions. It is recommended to store containers inside a clean, dry area and out of direct sunlight. The recommended storage temperature should not exceed 30°C.

Please read the current product Safety Data Sheet and any precautionary statements on the product package prior to use. Follow all applicable precautions and directions. Contact *MicroCare* prior to use with any questions.



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